

STANDARD SPECIFICATION
SECTION 16719
HIRSCH ACCESS CONTROL SYSTEM

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STANDARD SPECIFICATION
SECTION 16719
HIRSCH ACCESS CONTROL SYSTEMS

PART 1 - GENERAL

1.01 SCOPE

The work covered by this section of the specifications consists of the material and the work required to install a Hirsch access control system to restrict and monitor access to selected areas (i.e., vault rooms, vault-type rooms, sensitive areas, etc.).

1.02 QUALITY ASSURANCE

The latest issue of the following specifications and standards form a part of these specifications.

- A. National Electric Code (NEC) (NFPA 70).
- B. Underwriter's Laboratories, Inc. (UL).
- C. National Fire Protection Association Standards (NFPA 101)

1.03 RELATED DRAWINGS

- A. The electrical drawings will delineate the Hirsch access control system by locations of the controller, keypads, locking device, locking device power cabinet, conduit routing and size, cable size, and all wiring diagrams required for proper connection of field cable.
- B. Raceways shown on the drawings are not intended to show all bends, kicks, offsets, couplings, and supports.

PART 2 - PRODUCTS

2.01 GENERAL

- A. All electrical materials shall be new and approved by the Underwriter's Laboratories, Inc. for the application, except as otherwise specified herein.

- B. Materials and equipment shall be the standard product of manufacturers regularly engaged in the production of such material and shall be the manufacturer's current and standard design.

2.02 CONTROLLER

- A. The controller shall be manufactured by Hirsch Electronics Corporation.
- B. The controller shall be a Hirsch Model 2 or Hirsch Model 8 system controller as specified on the drawings.

2.03 KEYPADS

- A. The keypads shall be manufactured by Hirsch Electronics Corporation.
- B. The Hirsch digital scrambler keypad shall be Model No. DS37L, unless the drawings specify a high intensity display keypad Model No. DS37L-HI.
- C. Hirsch Model No. DS37L-HI high intensity display digital scrambler keypads shall be used at exterior locations, unless noted otherwise on drawings.
- D. The keypad shall be mounted on a Hirsch keypad mounting box as specified on the drawings.

2.04 CARD READERS AND BIOMETRIC DEVICES

Card readers and biometric devices shall be as specified on the drawings.

2.05 PRINTER

The Contractor shall provide a 12 ft. printer adaptor cable (standard interface: IBM Parallel, DB-25S) for connection of the parallel printer to the Hirsch controller.

2.06 LOCKING DEVICES

- A. Electric strikes, electro-mechanical bored-in locks, electromagnetic locks, and other locking devices shall operate on 24VDC, unless specified otherwise on the drawings.
- B. Locking devices shall operate in the fail-secure mode, whereby the locking device unlocks when the solenoid is energized and automatically locks when the solenoid is de-energized. Electromagnetic locks shall operate in the fail-safe mode, whereby the magnetic will release the door upon loss of power.
- C. Electric Strikes shall conform to ANSI A156.5 (BHMA Standard 501) Grade 1.
- D. Electro-Mechanical Bored-in Locks

1. Electro-mechanical bored-in locks shall be Sargent (Division of Kidde, Inc.), Model No. 8G71, 24VDC, 3W lock suitable for installing in hollow metal doors that are 1-3/4" thick.
2. Bored-in locks shall have the outside door knob rigid at all times unless unlocked electrically or opened with a key.
3. The bored-in lock shall be keyed on the outside door knob.
4. A Folger Adam Model No. 4-1/2EH Electric Hinge (non-load bearing) shall be provided to replace the middle hinge on doors where bored-in locks are installed. The hinge shall have 5 #18 wire leads passing through the hinge to connect the locking device control wiring from the access control system to the wiring inside the door going to the bored-in lock.

2.07 LOCKING DEVICE POWER SUPPLY

- A. The Contractor shall provide a 24VDC auxillary power supply for locking device power, sized as specified on the drawings.
- B. The locking device power supply shall consist of a battery charger and gel cell batteries to provide a minimum of four (4) hours backup 24VDC power in the event normal operating power is lost.

2.08 REQUEST-TO-EXIT (RQE) DEVICES

The Contractor shall provide Hirsch DTLM2 end-of-line modules and RQE normally-open pushbuttons inside the secured area as required on the drawings.

2.09 CABLE

- A. The cable to the Hirsch keypads, shall consist of 2 twisted, shielded pairs, 22 AWG or 18 AWG (wire size depending on distance of keypad from controller), color coded; Black, Red, Green, White. Overall shielded cable or individual shielded pairs are acceptable.
- B. The cable to the locking device shall consist of 1 twisted pair, 18 AWG, with an overall shield.
- C. The cable from the Hirsch controller to the end-of-line modules and the RQE devices shall consist of 2 twisted conductors, 22 AWG, with an overall shield.
- D. Cable to card readers and biometric devices shall be a twisted multipair 22 AWG cable with individually shielded pairs.

PART 3 - EXECUTION

3.01 GENERAL

- A. All cable shall be installed in conduit, except where required to be routed in door frames, inside doors for bored-in locks, or for connection of RQE pushbutton devices attached to furniture or non-permanent fixtures.
- B. No splices are allowed in the cable between any component in the access control system, with the exception where necessary to connect to a locking device or associated hardware. Where required, splices shall be butt-spliced and covered with heat shrink tape.

3.02 CONTROLLER

- A. Install the Hirsch controller in a convenient location inside the restricted access room, unless indicated otherwise on the drawings. The controller shall be so mounted that the top of the cabinet does not exceed 6 feet, 6 inches above the finished floor.
- B. Connect the Hirsch controller to a dedicated 115 VAC, 15A circuit. Controller power wiring shall be #12 THHN installed in conduit. The conduit shall enter the controller at the bottom of the cabinet.
- C. Ground the controller cabinet to the building ground system with a #10 conductor color-coded green.
- D. The final switch settings and powering-up of the controller shall be completed by an authorized Hirsch representative.

3.03 KEYPADS

- A. The Hirsch keypad shall be installed on the appropriate Hirsch mounting box listed below, unless indicated otherwise on the drawings.

Mounting Box No.	Description
MB1	Standard Flush-Mounted Keypad
MB2	Standard Surface-Mounted Keypad
MB5	Heavy Duty Exterior Surface-Mounted Keypad

- B. Mount keypads on the latch side of the door at a height of 56 to 58 inches from floor to keypad centerline, unless specified otherwise on drawings.
- C. Install a 2 stranded twisted pair 22 AWG cable with an overall shield, color-coded Black, Red, Green, White, from each keypad to the Hirsch controller or Hirsch PS2 power supply.
- D. If the distance from the Hirsch controller to the keypad exceeds 750 feet but is less than 1500 feet, install a 2 stranded twisted pair 18 AWG cable with an overall shield, color-coded Black, Red, Green, White, from each keypad to the Hirsch controller.

- E. Provide a 12 inch cable service loop at each keypad to allow removal of the device for resetting switches or repair without disturbing field connections.
- F. For keypad distances over 1500 feet from the controller, install a Hirsch PS2 power supply cabinet at the keypad location for keypad and door strike power.
- G. All final switch settings at the keypad shall be completed by an authorized Hirsch representative.

3.04 CARD READERS AND BIOMETRIC DEVICES

- A. Mount card readers and biometric devices at the manufacturer's recommended height for effective use.
- B. Provide a 12 inch cable service loop at each card reader and biometric device to allow the device to be serviced without removing field wiring.

3.05 LOCKING DEVICES

- A. Install a 2 conductor, twisted, shielded 18 AWG cable from the locking device to the Hirsch controller. Locking device cable shall not be installed in the same raceway with keypad or RQE device wiring.
- B. Install the locking device cable to the appropriate N.O. and C. terminals at the Hirsch controller for lock devices that have fail-secure operation.
- C. Install a 39V MOV (Metal Oxide Varistor) G.E. Part #V39ZA1 across the plus and minus lines going into the locking device to provide suppression of electrical noise.
- D. In doors where electro-mechanical bored-in locks are installed, replace the middle hinge on the door with an electric hinge (non-load bearing). Butt-splice wiring to the leads on the electric hinge and cover splice with heat shrink tape.
- E. Provide a 12 inch cable service loop at the locking device to allow removal of the device for cleaning or repair without disturbing field connections.

3.06 LOCKING DEVICE POWER SUPPLY

- A. Mount the locking device power supply within 6 feet of the Hirsch controller (not applicable for the Hirsch PS2 power supply cabinet). The cabinet shall be so mounted that the top of the cabinet does not exceed 6 feet, 6 inches above the finished floor.
- B. Connect the power supply to the same dedicated 115 VAC, 15A circuit as the Hirsch controller. The Hirsch PS2 power supply cabinet may be powered on a different circuit if the distance from the Hirsch controller is excessive.

3.07 REQUEST-TO-EXIT (RQE) DEVICES

- A. Install all RQE devices inside the secured room.

- B. Mount RQE pushbuttons located at exit doors on the latch side of the door at a 56"-58" mounting height.
- C. The Hirsch DTLM2 end-of-line module will be installed in the junction box the RQE pushbutton or device is mounted on, unless indicated otherwise on the construction drawings.

3.08 FINAL ACCEPTANCE AND TRAINING

A. Final Acceptance

1. The Contractor shall obtain the services of an authorized Hirsch representative to approve final connections at the Hirsch controller and the keypads, and to power up the system.
2. The Hirsch representative shall conduct operational tests in the presence of the Contractor, the Sandia Delegated Representative (SDR), and the system user.

B. Training

1. Upon final acceptance of the access control system, the Hirsch representative shall conduct a two (2) hour training class with the system user to:
 - a. show all of the capabilities of the Hirsch equipment.
 - b. instruct the user how to program the Hirsch controller through the use of the Hirsch keypad.
2. The Contractor shall provide the system user with two (2) Hirsch installation and programming manuals enclosed in a three-ring binder.
3. The Contractor is not responsible for programming the Hirsch controller for the system user.
4. The Contractor is not responsible for the maintenance or repair of Hirsch equipment after the expiration of the warranty period specified by Hirsch Electronics Corporation.

END OF SECTION